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COMPARATIVE ANALYSIS OF MANAGEMENT MODELS FOR CERVICAL CANCER SCREENING BETWEEN BRAZIL AND HAITI

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Abstract: This paper looks at cancer, exploring its forms of prevention, associated risk factors and the influence of socio-economic inequalities on women's lives. It highlights the importance of public policies and interventions focused on minimizing these imbalances in order to improve access to and the effectiveness of screening programs. **OBJECTIVE:** To analyze the equivalence of management in cervical cancer screening programs between Brazil and Haiti. **METHODOLOGY:** This study is based on an Integrative Literature Review, using articles published in virtual databases, including the Virtual Health Library (VHL) and the Scientific Electronic Library Online (SciELO). **RESULTS:** 15 relevant articles were found that discuss the challenges faced by women in contexts of socioeconomic inequality, including barriers to accessing health services. These studies highlight the need for more inclusive and accessible public health policies. **FINAL CONSIDERATIONS:** It can therefore be concluded that it is essential to implement health policies that are more inclusive and adapted to women's socio-economic realities. Strategies that increase access to screening and treatment, as well as health education that effectively reaches the female population in various social contexts, are urgently needed to reduce incidence and mortality rates from cervical cancer.

Keywords: Women's Health, Pap smears, Papillomavirus infections.

INTRODUCTION

The Human Papillomavirus (HPV) is a sexually transmitted virus that infects the skin and mucous membranes and is highly contagious. There are more than 100 different types, some of which cause genital warts, while others are associated with different types of cancer, such as cervical cancer (Claro; Lima; Almeida, 2021).

Cancer is a genetic disease caused by mutations in the genes that regulate cell proliferation and death. These mutations can be hereditary or acquired throughout life due to exposure to environmental factors such as smoking, radiation and chemical agents. In most cases, cancer results from an interaction between genetic and environmental factors (Silva et al., 2022).

Cervical cancer is caused in most cases by persistent HPV infection, especially oncogenic types. This disease can be prevented or detected early through screening tests, such as the Pap smear and the HPV test, which are recommended for women between the ages of 25 and 64 who have already started having sex (Carvalho; Costa; França, 2019).

The Pap smear is a simple procedure carried out by doctors or nurses in health units, including those of the Unified Health System (SUS). The sample is taken with a spatula and a brush and sent for laboratory analysis in order to detect cellular alterations associated with HPV (Aguilar; Soares, 2015).

Another essential strategy for preventing cervical cancer is vaccination against HPV, which protects against types 16 and 18, responsible for around 70% of cases of the disease. The vaccine is recommended for girls from the age of 9 and boys from the age of 11, and can be administered up to the age of 45. However, vaccination is not a substitute for screening tests and should be combined with other preventive measures (INCA, 2020).

Haiti's situation with regard to cervical cancer screening is precarious, due to infrastructure problems, a lack of financial resources and a shortage of trained professionals. Pap smear coverage is very low, and HPV vaccination is not widely available. In addition, the lack of awareness about the importance of prevention exacerbates the situation. Although actions by the international community have sought to improve this situation, there are still significant challenges to ensuring ac-

cess to healthcare for Haitian women (Tillyard et al., 2019; Jean Paul et al., 2022).

In Brazil, estimates indicate that between 2023 and 2025, there will be around 704,000 new cases of cancer, especially non-melanoma skin cancer, breast cancer, prostate cancer, colon and rectum cancer, lung cancer and stomach cancer. These figures highlight the need for preventive actions and awareness campaigns to reduce cancer incidence and mortality (INCA, 2023).

To curb the spread of cervical cancer, it is essential to invest in effective public policies, including HPV vaccination and screening tests. In addition, it is essential to guarantee universal access to healthcare, especially for women in remote and low-income areas. Training health professionals and improving infrastructure are also necessary measures to ensure early diagnosis and effective treatment (Ferreira et al., 2022).

SUS offers free HPV vaccination and Pap smears as strategies for prevention and early detection of the disease. The aim of these measures is to reduce the incidence and mortality associated with cervical cancer and enable more effective treatments at earlier stages (Lopes; Ribeiro, 2019).

OBJECTIVES

GENERAL OBJECTIVE

To analyze the equivalence of management cervical cancer screening programs between Brazil and Haiti.

SPECIFIC OBJECTIVES

To highlight the factors that facilitate and hinder the prevention and treatment of cervical cancer;

To compare the health systems of Brazil and Haiti in relation to cervical cancer screening, evaluating the policies and strategies adopted in each country and their respective coverage;

THEORETICAL FRAMEWORK

CERVICAL CANCER

Cervical cancer is one of the main malignant neoplasms affecting women worldwide and represents a major public health challenge. This type of cancer develops in the tissue of the cervix, the lower region of the uterus that connects to the vagina, and is directly related to infection by the Human Papillomavirus (HPV), one of the most common sexually transmitted diseases (Lopes; Ribeiro, 2019).

Cervical cancer is a multifactorial disease influenced by genetic, environmental and behavioral factors. Its epidemiology and etiology vary according to geographical region, being influenced by socioeconomic and cultural conditions and access to health services. In addition to HPV infection, other risk factors include smoking, immunosuppression (such as in HIV carriers), advanced age, prolonged use of oral contraceptives and malnutrition. However, the relationship between these factors and the progression of the disease still requires further study (Matias et al., 2022).

Cervical cancer incidence and mortality are higher in low- and middle-income countries, where access to healthcare is limited and socioeconomic conditions are poor. Cultural factors, such as unprotected sex and multiple partners, also influence HPV transmission and, consequently, the risk of developing cancer. In Brazil, this neoplasm is the third most common type of cancer among women, with 16,590 new cases estimated in 2021, according to the National Cancer Institute (INCA). However, the mortality rate has been decreasing due to prevention and early detection, through vaccination against HPV and screening with the Pap smear (Ferreira et al., 2022).

The main cause of cervical cancer is HPV infection, transmitted mainly through sexual contact. Although most infections are eliminated by the immune system, in some cases it

can persist and develop into precursor lesions to cancer (Ferraz; De Jesus; Leite, 2019).

Globally, cervical cancer is the fourth most common type of cancer among women, with 570,000 new cases and 311,000 deaths per year. Most of these cases occur in countries with low coverage of preventive examinations, such as Haiti, where lack of access to health care compromises early detection and treatment. In contrast, in developed countries, where there is greater awareness and adequate health infrastructure, incidence and mortality are reduced due to HPV vaccination and regular screening (Claro; Lima; Almeida, 2021).

Most women with cervical cancer have no symptoms in the early stages, which makes early detection difficult. However, as the disease progresses, abnormal vaginal bleeding, pain during sexual intercourse and pelvic pain may appear. For this reason, the Pap smear is an essential tool for detecting cellular alterations before the disease progresses (Andrade Aoyama et al., 2019).

Early diagnosis is essential for successful treatment, which can include surgery, radiotherapy and chemotherapy. If alterations are detected in the Pap smear, a biopsy may be necessary to confirm the presence of cancerous cells. In addition to screening, HPV vaccination is an effective preventive measure, significantly reducing the risk of the disease (Silva et al., 2018).

In addition to vaccination and screening, other measures can reduce the risk of cervical cancer, such as:

- Smoking cessation;
- Use of condoms during sex;
- Limiting the number of sexual partners;
- Promoting healthy habits that strengthen the immune system (Ribeiro et al., 2020).

Immunosuppressed women, including those with HIV, have a higher risk of developing cervical cancer and should undergo preventive examinations more frequently (Ferraz; De Jesus; Leite, 2019).

Cervical cancer is a treatable disease, and many women who receive an early diagnosis have a good chance of being cured. However, successful treatment depends on adherence to screening and medical recommendations. Access to quality information is essential for women to know the risk factors, prevention options and treatment possibilities (Ribeiro; Silva, 2018).

Health professionals play a crucial role in the prevention and treatment of cervical cancer. It is up to them to educate the female population about the importance of the Pap smear and HPV vaccination, as well as encouraging healthy habits and safe practices (Claro; Lima; Almeida, 2021).

In addition to the individual impact, cervical cancer affects families and communities. For this reason, awareness campaigns and the active participation of civil society are fundamental to reducing the incidence and mortality associated with the disease. Prevention and early diagnosis should be a shared responsibility between governments, health professionals and the population, ensuring greater access to health services and increasing adherence to cancer control strategies (Claro; Lima; Almeida, 2021).

PUBLIC POLICIES FOR CERVICAL CANCER SCREENING

Public policies for cervical cancer screening play a fundamental role in reducing the incidence and mortality of the disease. These policies must be comprehensive and guarantee universal access to prevention, early diagnosis and appropriate treatment, especially for vulnerable and hard-to-reach populations.

One of the main measures is to include older women in screening programs. Women over 65 are at greater risk of developing cervical cancer and should therefore have regular access to Pap smears. In addition, it is essential that the government encourages women to adhere to screening, as many avoid the exam out of fear, misinformation or shame (Ferreira et al., 2022).

Expanding Access to Health Services

Ensuring the availability of health services in all regions of the country, especially in remote areas with less infrastructure, is an essential strategy. Screening and prevention must be decentralized, allowing all women, regardless of location, to have access to Pap smears and other cervical cancer prevention services (Silva et al., 2022).

Public policies must also take into account the specificities of black and indigenous women, who are at greater risk of developing the disease. Programs aimed at these populations are essential to ensure equal access to health services (Formigosa; Da Silva, 2021).

Quality Assurance in Health Services

Screening policies should ensure that health services are equipped with modern technology and that professionals are trained to carry out quality tests. In addition, awareness campaigns should be promoted to inform the population about the importance of prevention, using accessible media such as television, radio, the internet and information material in health units (Claro; Lima; Almeida, 2021).

Another important aspect is the privacy and confidentiality of patient information. Women need to feel safe and comfortable taking the Pap smear and seeking medical attention. In addition, it is essential to guarantee universal access to treatment for all women diagnosed with cervical cancer, as the high costs of treatment can be a significant obstacle (Matias et al., 2022).

Evaluating and Updating Public Policies

Screening policies must be constantly evaluated and updated in order to guarantee the effectiveness of the measures adopted. Analysis of the programs makes it possible to identify failures and opportunities for improvement, ensuring the optimization of health services (Medrado; Lopes, 2023).

In Brazil, cervical cancer screening is carried out by means of the Pap smear, which is available free of charge from the Unified Health System (SUS) for women aged between 25 and 64. The test can be carried out in basic health units and family clinics, by appointment with a health professional (Formigosa; Da Silva, 2021).

In addition to the test, the Ministry of Health recommends HPV vaccination for girls aged between 9 and 14 as a primary prevention strategy for cervical cancer. The vaccine is offered free of charge by the SUS in all health units (Ribeiro; Silva, 2018).

National Cervical Cancer Control Program (PNCC)

The National Cervical Cancer Control Program (PNCC) coordinates and guides screening and prevention actions for this neoplasm throughout the country. The program involves health professionals, managers and representatives of civil society, guaranteeing the effectiveness of the actions and the adherence of the population (Claro; Lima; Almeida, 2021).

One of the main strategies of the PNCC is to train health professionals to perform the Pap smear and correctly interpret the results. In addition, the program promotes educational actions to make the population aware of the importance of cervical cancer screening and prevention (Silva et al., 2018).

Another focus of the PNCC is monitoring the quality of screening services, establishing criteria and indicators to evaluate the effectiveness of the Pap smear and guarantee excellent care for the population (Medrado; Lopes, 2023).

In 2020, the campaign “Cervical Cancer: Get tested. It’s quick, easy and can save your life”, aimed at raising awareness among the population about the importance of screening. The campaign was widely publicized, encouraging women to have regular preventive examinations (Matias et al., 2022).

Challenges and prospects

Although Brazil has made progress in implementing public policies for cervical cancer screening and prevention, there are still challenges to overcome. Among the main points to be improved are:

- Continuous training of health professionals to ensure that the tests are carried out correctly and that the results are interpreted;
- Expanding access to Pap smears, especially in vulnerable and hard-to-reach regions;
- Raising public awareness of the importance of screening and prevention through more effective educational campaigns;
- Improving the infrastructure of health services, ensuring adequate equipment and qualified professionals to carry out screening (Medrado; Lopes, 2023).

Implementing these improvements could ensure wider and more effective coverage, reducing the incidence of and mortality from cervical cancer in Brazil.

STRATEGIC ACTION PLAN FOR THE PREVENTION OF CERVICAL CANCER

The Strategic Action Plan for the Prevention of Cervical Cancer is an initiative of the Brazilian Ministry of Health aimed at reducing the incidence and mortality of this neoplasm, which is one of the main causes of death among Brazilian women. The plan was drawn up in 2011, based on Law No. 11,664 of April 29, 2008, which establishes the obligation to offer free Pap smears to women aged between 25 and 64 (Silva et al., 2022).

The plan organizes its actions into four strategic areas:

1. Health promotion
2. Primary prevention
3. Diagnosis and treatment
4. Palliative care

Health Promotion and Primary Prevention

Health promotion includes awareness campaigns to inform the population about the seriousness of cervical cancer, encouraging healthy habits and adherence to preventive examinations (Silva et al., 2022).

Primary prevention, in turn, involves expanding the supply of the HPV vaccine, the main cause of cervical cancer. In addition, the plan provides for the implementation of sexual and reproductive education programs, with the aim of preventing the transmission of the virus and raising awareness about the importance of vaccination and the use of condoms (Claro; Lima; Almeida, 2021).

Diagnosis, Treatment and Palliative Care

Diagnosis and treatment include regular Pap smears, the main method of early screening for the disease. The plan also seeks to improve access to diagnostic and treatment services, ensuring that women with a suspected or confirmed diagnosis of the disease receive appropriate care as soon as possible (Claro; Lima; Almeida, 2021).

Palliative care is an essential aspect of the plan, focusing on improving the quality of life of patients with advanced cancer. This includes pain control, psychological assistance and support for families, ensuring more humanized care (Claro; Lima; Almeida, 2021).

Quality of Services and Related Legislation

Ordinance No. 1,271 of June 6, 2014, established the National Cytopathology Quality Program (PNQC) as part of the plan. This program aims to guarantee the quality of Pap smear tests carried out in Brazil by training health professionals, monitoring the quality of services and certifying laboratories (Ferreira et al., 2022).

In addition, Law No. 13.685, of June 18, 2018, created the National Cervical Cancer Prevention Week, held annually in the week of December 10. The aim is to mobilize society to prevent the disease by promoting awareness campaigns, expanding the supply of Pap smears and vaccination against HPV (Claro; Lima; Almeida, 2021).

National Prevention Week is a strategic opportunity to increase the population's knowledge of cervical cancer, reducing taboos and encouraging screening and prevention. With its effective implementation, it is hoped to reduce the incidence and mortality of the disease in Brazil (Claro; Lima; Almeida, 2021).

Guide to Epidemiological Surveillance and Other Actions

The Ministry of Health also makes available the Cervical Cancer Epidemiological Surveillance Guide, a document aimed at health professionals, containing guidelines on epidemiology, screening, histopathological diagnosis, treatment and care for confirmed cases (De Abreu; Nascimento, 2019).

The effective implementation of the Strategic Action Plan for Cervical Cancer Prevention requires the collaboration of various sectors of society, including governments, health professionals and the general population. The legislation and ordinances related to the plan seek to guarantee:

- Expanding the range of prevention and screening services

- Improving the quality of diagnostic and treatment services
- Training health professionals
- Monitoring the effectiveness of cervical cancer control actions (Silva; Marques; Costa, 2021).

With the effective implementation of these strategies, it is hoped to strengthen prevention, increase access to health services and significantly reduce mortality from cervical cancer in Brazil.

STRATEGIC ACTION PLAN FOR CERVICAL CANCER SCREENING IN HAITI

It is important to note that Haiti is a country with limited resources and faces many public health challenges, including limited access to quality health services and a lack of adequate infrastructure. , Haiti's Ministry of Public Health and Population has been working on cancer prevention and control initiatives, including the implementation of breast and cervical cancer awareness and screening campaigns, with the aim of reducing the incidence of and mortality from these diseases in the country (Guillaume *et al.*, 2022, p.12).

In addition, the Haitian government has received support from international organizations, such as the Pan American Health Organization (PAHO), to strengthen its health system and improve the prevention and control of chronic diseases, including cancer (Degennaro *et al.*, 2019, p.71).

It is important to note that cervical cancer screening is an important measure for the prevention and control of the disease, especially in developing countries. The implementation of public policies aimed at cervical cancer screening, along with other preventive measures such as HPV vaccination and raising awareness about the importance of the Pap smear, can help to significantly reduce the incidence of and mortality from this disease (Young, 2018, p.131).

In 2015, the Haitian government launched the National Health Development Plan (PNDS) 2012-2022, which aims to improve the health of Haiti's population, including the prevention and treatment of cervical cancer. The PNDS includes specific targets to improve access to cervical cancer screening and treatment throughout the country (Moise; Kobetz, 2018, p.872).

In 2016, Haiti's Ministry of Public Health and Population (MSPP) launched a pilot program to screen women in poor rural and urban areas for cervical cancer. The program, which was supported by the Pan American Health Organization (PAHO), aimed to raise awareness about the importance of cervical cancer screening and provide access to Pap smears (Tillyard *et al.*, 2019, p.1458).

In 2018, the MSPP launched the National Cancer Prevention and Control Plan (PNPCC), which aims to improve cancer prevention, early detection and treatment across the country. The PNPCC includes specific strategies to improve access to cervical cancer screening and treatment, including expanding HPV vaccination programs and improving the quality of Pap smears.

In , Haiti has been working in partnership with PAHO and other international organizations to improve access to cervical cancer screening and treatment throughout the country. In 2020, PAHO launched a pilot project in three departments of Haiti to improve access to cervical cancer screening for women in rural and poor urban areas (Moise *et al.*, 2021, p.873).

Although Haiti still faces significant challenges in relation to cervical cancer screening and prevention, these norms, laws and actions show a growing commitment by the Haitian government to improving the health of the population and combating cervical cancer (Pilleron, 2020, 1638).

METHODOLOGY

TYPOLGY

This study is an **integrative literature review** aimed at identifying, analyzing and synthesizing studies on cervical cancer screening in **Brazil and Haiti**. This method allows a systematic approach to gather and interpret the available evidence, contributing to the expansion of knowledge on the subject (Mendes; Silveira; Galvão, 2008).

The integrative review follows **six fundamental stages**: defining the problem, selecting the literature with inclusion and exclusion criteria, extracting and categorizing the information, critically evaluating the findings, interpreting the results and synthesizing the knowledge. This process guarantees the objectivity and applicability of the conclusions (Mendes; Silveira; Galvão, 2008).

RESEARCH SITE

The research was carried out in scientific databases, including the Virtual Health Library (VHL), Latin American and Caribbean Health Sciences Literature (LILACS), the National Library of Medicine (Medline), the Nursing Database (BDENF) and the Scientific Electronic Library Online (SciELO). The aim was to compare cervical cancer screening programs in Brazil and Haiti.

SAMPLE

The sample included scientific articles published between 2019 and 2023, available in Portuguese, French and English. The descriptors used were “Women’s Health”, “Pap Smear Test” and “Papillomavirus Infections”, according to the Descriptors in Health Sciences (DeCS) platform.

Inclusion Criteria

The articles included were complete, original and published in full, which addressed the subject of the study within the established period.

Exclusion Criteria

Incomplete texts, publications prior to 2019, articles that did not meet the research objectives, as well as theses, dissertations and monographs were excluded.

The articles were selected, analyzed and organized according to their relevance to the topic. The data was structured into tables and summary charts, allowing for an effective comparative analysis between the two countries (Mendes; Silveira; Galvão, 2008).

Interpretation of results

The articles were searched in the VHL databases, applying the inclusion and exclusion criteria, and both the analysis and synthesis of the data extracted from the articles were carried out descriptively, making it possible to observe, count, describe and classify the data, in order to gather the knowledge produced on the subject explored in the review.

Initially, 15 articles published in the VHL with the DeCS combined using the *and* particle and indexed in different were found. In applying the analysis filters based on the first inclusion criteria, full text, resulted in 5,559 articles. Applying the second filter, year of publication between 2019 and 2023, resulted in 15107 articles. Of these, only 38460 were in French, English or Portuguese. This can be illustrated in Table 1 below:

When the analysis filters were applied to the VHL and indexed in the LILACS, MEDLINE, BDENF and SCIELO databases, 57 articles were selected. After reading the abstracts, 42 articles were excluded. It should also be noted that after exhaustive reading of the other works by two reviewers, only 15 articles met the objectives of the study, as described in Table 2.

Databases	Health Sciences Descriptors (DeCS)	Full Text	Publications from 2019 to 2023	Language English Portuguese and French
BVS (Virtual Health Library)	Women's Health	21107	3982	4047
	Pap test	3789	964	971
	Papillomavirus infections	26663	10161	33442
TOTAL		51559	15107	38460

Table 1 Distribution of selected articles according to Virtual Health Library (VHL), DeCS, full text, year of publication between 2019 and 2023 and developed in Brazil.

Source: own elaboration, (2024).

Databases	Health Sciences Descriptors (DeCS)	Selected articles	Excluded articles	Articles included
BVS (Virtual Health Library)	Women's Health	17	12	5
	Pap test	20	15	5
	Papillomavirus infections	20	15	5
TOTAL		57	42	15

Table 2 Distribution of selected articles, excluded articles and included articles.

Source: own elaboration, (2024).

Code	Author/Year	Journal
J1	DIAS, M.B.K. <i>et al.</i> , 2022	Brazilian Journal of Cancerology
J2	SILVA, E.G.A. <i>et al.</i> , 2023	RBAC
J3	RIBEIRO, A. <i>et al.</i> , 2021	Cancer Prevention Research
J4	CLARO, I.B.; LIMA, L.D. de; ALMEIDA, P.F. de, 2021	Science & Collective Health
J5	VIEIRA, Y.P. <i>et al.</i> , 2022	Cad Saude Publica
J6	BARBOSA, A.F. <i>et al.</i> , 2020	Portal Magazine: Health and Society
J7	PEREIRA, M.V.S.; VIEIRA, R.S.L., 2021	Bionorte
J8	GUILLAUME, D. <i>et al.</i> , 2023	Journal of Psychosocial Oncology
J9	GUILLAUME, D. <i>et al.</i> , 2023	PLOS Global Public Health
J10	BIEN-AIMÉ, D.; HOLTER, V., 2020	Obstetrics & Gynecology
J11	MANSOUR, T. <i>et al.</i> , 2019	Obstetrics & Gynecology
J12	RAYNAULT, M.-F.; FÉTHIÈRE, C.; CÔTÉ, D., 2020	International Journal for Equity in Health
J13	BRUNI, L. <i>et al.</i> , 2022	The Lancet Global Health
J14	ERKINS, R.B. <i>et al.</i> , 2023	Jama
J15	BEDELL, S.L. <i>et al.</i> , 2020	Sexual Medicine Reviews

Chart 1 Distribution of articles on the differences between the Brazilian cervical cancer screening program and the Hati cervical cancer program, according to coding, author/year and journal.

Source: Own elaboration, (2024)

The selected articles were then distributed according to the indexed databases separately, as shown in Table 3.

Databases	Total
LILACS	04
BDENF	03
MEDLINE	02
SCIELO	06
Total	15

Table 3 Distribution of selected articles according to indexed databases.

Source: Own elaboration, (2024).

With regard to the years of publication of the articles, between 2019 and 2023, the data collected is described in Table 4 below.

Year of Publication	Total
2019	01
2020	05
2021	03
2022	03
2023	03

Table 4 Distribution of selected articles by year of publication.

Source: Own elaboration, (2024).

Data analysis

The data was analyzed and arranged systematically, using summary tables and then categorized. The recommendations of Mendes, Silveira and Galvão (2008) were used to analyze the data.

The articles selected to make up the sample were identified with codes to summarize the results. The codes are represented by the letter “J” followed by the cardinal number, for example: J1, J5 and J15. As for the methodological design, the articles were distributed/classified by: code, author/year and journal, as shown in Chart 1.

After collecting the articles, they were classified by codes (n=15) and full titles, and then categorized according to the levels of evidence: evidence I (n=02), evidence III (n=02), evidence IV (n=08) and evidence V (n=03). The coding adopted for the articles ranged from J1 to J15, as shown in the table below. The articles selected for the sample were distinguished according to Evidence-Based Medicine (EBM).

EBM is a clinical decision-making action based on scientific evidence (EL DIB, Regina *et al.*, 2014).

EBM has four principles: 1. explain contradictory results on the same clinical question; 2. use the best available evidence for clinical decision-making; 3. consider the clinical experience of the health professional; and 4. take into account the patient's preferences during the decision-making process (EL DIB, Regina *et al.*, 2014).

The same articles were then distributed by place of study, sample characteristics and study design, as shown Chart 3.

Moving on with the analysis, Table 4 presents the objectives of each study, which are represented by the “Code” column. This table is a meticulous compilation that correlates each individual article with the specific purpose of its study, focusing on the differences between cervical cancer screening programs in Brazil and Haiti. The selection of objectives

seeks to reflect the nuances and peculiarities observed between the two regions, highlighting the methodologies applied, populations studied and results targeted.

Firstly, Table 4 a group of studies that focus on evaluating the coverage and effectiveness of screening, such as articles J1, J2, J5, J7, J9 and J10. J1 and J2, for example, focus analyzing specific indicators within Brazilian regions, while J5 expands this analysis to trends and inequalities in Brazilian capitals. In the Haitian context, J9 and J10 assess the impacts of socio-demographic variables and identify barriers to screening, respectively. These studies are crucial to understanding how screening programs are working and where they can be improved.

Then there are studies with a more qualitative or exploratory approach, such as J3, J6, J8, J11, J14 and J15. J3 proposes a reflection on global tracking strategies post-COVID-19, suggesting a broader and more forward-looking perspective. J6, J8 and J11, on the other hand, offer detailed descriptions of specific screening practices and engagement in health services, with J11 highlighting the importance interprofessional programs in resource-limited settings. J14 and J15 are comprehensive reviews that discuss the evolution of screening practices and suggest future directions for these initiatives.

Finally, the J13 study stands out for its unique approach, offering a global analysis of the coverage of cervical cancer screening programs. This study is key to understanding variations in the effectiveness of screening in different regions of the world, providing a broader context that can inform public health policies.

This variety of approaches in the studies reflects the complexity of cervical cancer screening strategies and highlights both the areas that need more attention and those that show promising results. By analyzing these studies together, it becomes possible to identify patterns, common challenges and opportunities for significant improvements in screening programs.

Code	Title	Level of evidence
J1	Cervical cancer screening in women aged 25 to 64: indicators of the first cytopathological examination reported in SISCOLO, 2007- 2013	IV
J2	Cervical cancer screening in Bahia: evaluation of coverage, adherence, adequacy and positivity of cytopathologies performed between 2017 e 2021	IV
J3	Rethinking cervical cancer screening in Brazil post COVID-19: A global opportunity to adopt higher impact strategies	III
J4	Guidelines, strategies for the prevention and screening of cervical cancer uterus: the experiences of Brazil and Chile	III
J5	Trends and inequalities in self-reported cervical cancer screening in Brazilian capitals from 2011 to 2020	III
J6	Screening for cancer: a descriptive study	IV
J7	Cervical cancer screening in Minas Gerais women 2012- 2015	IV
J8	Exploring engagement in cervical cancer prevention services among Haitian women in Haiti and in the United States	IV
J9	Sociodemographics and health-literacy as predictors of cervical cancer screening practices among Haitian women	IV
J10	Barriers and Drivers of Cervical Cancer Screening in Gonaives, Haiti	IV
J11	An interprofessional approach to training in cervical cancer screening in a low resource setting of rural Haiti	III
J12	Social inequalities in breast cancer screening: evaluating written communications with immigrant Haitian women in Montreal	III
J13	Cervical cancer screening programs and age-specific coverage estimates for 202 countries and territories worldwide	II
J14	Cervical cancer screening: a review	I
J15	Cervical cancer screening: past, present, and future	I

Table 2 Distribution of articles on the differences between the cervical cancer screening program in Brazil and the cervical cancer program in Haiti, according to coding, full title and level of evidence.

Source: Own elaboration, (2024).

Code	Location	Sample Characteristics	Study design
J1	Rio Janeiro (RJ), Brazil, such as the José Alencar Gomes da Silva National Cancer Institute (INCA), Federal University of Rio de Janeiro (UFRJ) and Oswaldo Cruz Foundation (Fiocruz).	32.219.235 women	Quantitative
J2	Bahia	1.969.259 women	Quantitative
J3	Brazil	54 articles	Qualitative
J4	Brazil and Chile	34 articles	Exploratory
J5	Brazil (Capitals)	197,198 women	Quantitative
J6	Arapiraca, Alagoas,	13,971 women	Description
J7	Belo Horizonte, Juiz de Fora, Montes Claros and Uberlândia	2.451.607 women	Description
J8	Minas Gerais	2.451.607 women	Description
J9	Haiti	6,350 women	Quantitative
J10	Haiti	200 women	Quantitative and Qualitative
J11	Haiti	10 professionals health	Qualitative
J12	Canada and Haiti	Not specified	Qualitative
J13	Haiti	34 articles	Quantitative
J14	United States - Haiti	43 articles	Qualitative
J15	Haiti	66 articles	Qualitative

Chart 3 Distribution of articles on the differences between the cervical cancer screening program in Brazil and the cervical cancer health program in Haiti, according to coding, location, sample characteristics and study design.

Source: Own elaboration, (2024).

Code	Objective of the study
J1	To analyze indicators of the first cytopathological examination in Brazil from 2007 to 2013.
J2	To evaluate the coverage, adherence, adequacy and positivity of cytopathologies in Bahia between 2017 e 2021.
J3	To explore global post-COVID-19 cervical cancer screening strategies in Brazil.
J4	To compare cervical cancer prevention guidelines and strategies between Brazil and Chile.
J5	To investigate trends and inequalities in self-reported cervical cancer screening in the Brazilian capitals from 2011 to 2020.
J6	To describe cervical cancer screening in Arapiraca, Alagoas.
J7	To analyze cervical cancer screening in women from four cities in Minas Gerais from 2012 to 2012. 2015.
J8	To examine engagement in cervical cancer prevention services among Haitian women in the Haiti and the United States.
J9	To evaluate cervical cancer screening practices among Haitian women based on sociodemographics and health literacy.
J10	The main objective of the study was to assess how Haitian women perceive the referral for mammography sent by the Quebec Breast Cancer Screening Program.
J11	To evaluate an interprofessional cervical cancer screening training program in a scenario of low resources in rural Haiti.
J12	Analyzing written communications and social inequalities in cancer screening programs with Haitian immigrant women in Montreal.
J13	To estimate the age-specific coverage of cervical cancer screening programs in 202 countries and territories.
J14	To review the evolution and effectiveness of cervical cancer screening practices.
J15	Explore the historical evolution and future directions in cervical cancer screening.

Table 4 Distribution of articles on the differences between the Brazilian cervical cancer screening program and the Hati cervical cancer program, according to study code and objective.

Source: Own elaboration, (2024).

Code	Results found
J1	Cervical cancer in Brazil showed an increasing trend in the ratio of high-grade intraepithelial lesions to squamous cell carcinoma in the Northeast, Southeast and South Regions, indicating good tracking performance in these areas.
J2	The study on cervical cancer screening in Bahia from 2017 to 2021 indicates that, despite the adequacy of the samples being within expectations and the increase in the positivity of the tests, the parameters of coverage and adherence were not achieved defined by the Ministry of Health.
J3	In Brazil, the Unified Health System (SUS) offers free cytology tests, colposcopy and treatment, but faces challenges due to inequality in infrastructure and resources available, which affects the performance of screening programs and contributes to significant disparities in cervical cancer incidence and mortality.
J4	The lack of centralized coordination and failures to follow up women with altered tests are recurring problems that compromise the effectiveness of the program. In addition, the Brazilian system suffers from the absence of an active search for at-risk populations and a poor quality control system for the tests, which results in a lower rate of early detection of the disease and, consequently, higher morbidity and mortality rates mortality.
J5	The study reveals a downward trend in self-reported cervical cancer screening in Brazilian capitals from 2011 to 2020, with marked inequalities in coverage, especially exacerbated by the COVID-19 pandemic.
J6	low incidence of cervical cancer screening in women under 24 and those in senescence, with the majority of tests carried out in these age groups recommended, highlighting the need for interventions and improvements in diagnosis to increase the effectiveness of screening.
J7	The age groups most affected by high-grade intraepithelial lesions (HSIL) are women aged between 25 and 44, with a higher prevalence in women with characteristics such as low levels of schooling and a greater number of sexual partners. Insufficient screening coverage in the Minas Gerais region, with only 28.42% coverage at the end of the year. over three years, well below the 80% recommended by the World Health Organization.
J8	Despite the fact that Haitian women face a disproportionate burden of cervical cancer in both Haiti and the United States, uptake of preventive services is worryingly low.
J9	Cervical cancer screening rates in Haiti are low, and that literacy in health and access to health information are crucial determinants of engagement cervical cancer screening.
J10	Analysis of the data revealed that in Haiti, although 88% of the participants are aware cervical cancer, only 21% have undergone screening. 25% are afraid of the test and 38% need their partner's approval to undergo it. In addition, 96% say that access to treatment influences their decision to undergo screening, while 50% prefer it not knowing if they have cervical cancer.
J11	Intensive interprofessional training can effectively empower health professionals in Haiti to carry out competent cervical cancer screening and treatment in a context of limited resources.
J12	The results indicate that the letter may be a barrier to adherence to screening due to the low level of literacy, insufficient knowledge about the disease and lack of financial resources among disadvantaged Haitian women. These findings emphasize need to tailor preventive strategies to specific subgroups, taking into account lower literacy levels and ensuring affordable access to screening. follow-up measures to increase adherence to mammography.

J13	Haiti is mentioned as one of the countries where the visual inspection test with acetic acid (VIA) is commonly recommended, especially suitable for configurations with limited resources. Screening coverage in Haiti is extremely low, reflecting the urgent need to improve access to and quality of cervical cancer screening.
J14	Cervical cancer screening in Haiti faces significant challenges due to limited resources and inadequate infrastructure, necessitating tailored strategies for increase coverage and awareness of the importance of early detection.
J15	The global impact of human papillomavirus (HPV) and cervical cancer is highlighted, emphasizing the need for technological innovations such as rapid, low-cost HPV tests and digital colposcopy enhanced by artificial intelligence. These developments could significantly improve the efficiency and accessibility of cervical cancer screening, especially in Haiti, where limited resources and inadequate infrastructure amplifies the need for accessible screening methods.

Table 5 Distribution of articles on the differences between the cervical cancer screening program in Brazil and the cervical cancer program Haiti, according to coding, and the main results found in the studies.

Source: Own elaboration, (2024).

Categories	Articles with codes	Authors/year
Indicators and inequalities in screening in Brazil (A)	J1, J2, J3, J4, J5, J6, J7, J13, J14	DIAS, M.B.K. et al., 2022; SILVA, E.G.A. et al., 2023; RI-BEIRO, A. et al., 2021; CLARO, I.B.; LIMA, L.D. de; AL-MEIDA, P.F. de, 2021VIEIRA, Y.P. et al., 2022; BARBOSA, A.F. et al., 2020; PEREIRA, M.V.S.; VIEIRA, R.S.L., 2021; BRUNI, L. et al., 2022; ERKINS, R.B. et al., 2023
Cervical cancer screening and challenges in Haiti (B)	J8, J9, J10, J11, J12, J15	GUILLAUME, D. et al., 2023; GUILLAUME, D. et al., 2023; BIEN-AIMÉ, D.; HOLTER, V., 2020; MANSOUR, T. et al., 2019 RAYNAULT, M.-F.; FÉTHIÈRE, C.; CÔTÉ, D., 2020; BEDELL, S.L. et al., 2020

Chart 6 Categorization of the articles selected for content analysis.

Source: Own elaboration, (2024).

The main results found in the selected articles can be identified in descending order by year of publication, as shown in Chart 5.

From the critical and detailed analysis of the articles, the following categories emerged: Indicators and inequalities in screening Brazil (A) and Cervical cancer screening and challenges in Haiti, described in Chart 6.

DISCUSSION

The analysis of the data made it possible to classify the findings into two thematic categories: Indicators and inequalities in screening in Brazil (Category A) and Cervical cancer screening and challenges in Haiti (Category B).

Cervical cancer screening in Brazil has both progress and challenges, with regional inequalities and shortcomings in adherence to the Pap smear. Studies indicate that, despite the increase in positive tests, coverage and follow-up of women with altered results do not meet the parameters recommended by the Ministry of Health (Silva et al., 2023).

In Bahia, for example, the rate of adherence to screening remains lower than expected, with difficulties in detecting precursor lesions. In states such as Alagoas and Minas Gerais, there is insufficient coverage and a higher incidence of high-grade lesions among women with low levels of education (Barbosa et al., 2020; Pereira & Vieira, 2021).

The COVID-19 pandemic has had a negative impact on screening, reducing coverage and hindering access to health services. Studies show that the lack of centralized coordination compromises the effectiveness of the national program, highlighting the need for improvements in infrastructure and training of professionals (Ribeiro et al., 2021; Vieira et al., 2022).

In Haiti, cervical cancer screening faces significant barriers, including low adherence, difficulties in accessing health services and little information about HPV and cervical cancer (Guillaume et al., 2023). Cultural factors, such as the need for approval from the partner to undergo the test, and fear of the procedure also negatively influence women's participation (Bien-Aimé & Holter, 2020).

International programs, such as those supported by the Pan American Health Organization (PAHO), have sought to expand the coverage of HPV screening and vaccination. However, a lack of health literacy and limited medical resources make adherence difficult, especially in rural areas (Moise et al., 2021).

The use of accessible technologies, such as the visual inspection test with acetic acid (VIA) and digital colposcopy with artificial intelligence, could represent a viable solution for the Haitian reality, making screening more efficient and accessible (Bruni et al., 2022; Bedell et al., 2020).

A comparison between the two countries reveals structural differences in cervical cancer screening. While Brazil faces challenges in coverage and follow-up of screened women, Haiti suffers from barriers in access and awareness. Both countries need more effective public policies and strengthened health education to increase adherence to screening and reduce mortality from cervical cancer.

CONCLUSION

This study highlighted the significant importance of implementing and improving cervical cancer screening programs, with special attention to the disparities found between Brazil and Haiti. After data collection and a

critical analysis, it was possible to note that while Brazil has a more consolidated structure and established protocols, Haiti faces critical challenges, such as a lack resources and low adherence to existing programs, which reinforces the need for specific adaptations and improvements for this reality.

In this case, the socioeconomic and infrastructure differences between the two countries are directly reflected in the effectiveness of screening programs, highlighting an urgent need for investment in health education, training of professionals and infrastructure in the most affected areas. This study is believed to be of great value, as it contributes directly to nursing, public health, women's health programs and the development of more inclusive and effective policies that can be adapted to other regions with similar challenges.

It is therefore concluded that the studies carried out here, and future research carried out on this subject, will make a great contribution to the academic environment in the health field. They also reinforce the importance of more effective international collaboration, allowing for an exchange of knowledge and strategies between countries with different realities, with a view to a global increase in the efficiency of screening programs and, consequently, a reduction in mortality rates from cervical cancer.

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